2016 VEEP Sustainability Partner

NASA Langley Research Center (LaRC)

B2101 Earns EPA ENERGY STAR Certification for 2nd Year in a Row!

- **Description:**
  - Commercial buildings that earn the EPA's ENERGY STAR certification use an average of 35% less energy and release 35% less carbon dioxide than typical buildings.
  - B2101 is an all-electric office building with a hybrid ground source heat pump heating and cooling system and two small photovoltaic electricity systems.
  - LaRC reduced lighting loads and optimized heating and cooling schedules.
- **Results:**
  - Increase score of 79 for FY 2015 from 77 for FY 2014 meaning that the building is more energy efficient than at least 79% of similar buildings nationwide.
  - 2% decrease in annual energy consumption between 2014 and 2015
- **Future Plans:**
  - Continued monitoring and optimization of energy performance in B2101

LaRC- Wide Energy and Water Reduction Initiatives

- **Description:**
  - Conservation of energy and water through projects to update and/or replace HVAC systems and controls, distribution systems, supplemental loads, lighting, and ongoing assessments of HVAC run schedules for optimal energy and water conservation.
- **Results:**
  - Water consumption intensity has decreased by 22.7% from FY 2007 to FY 2015
  - 6% decrease in annual consumption of electricity, fuel oil, and natural gas in Goal Subject Facilities between 2014 and 2015.
- **Future Plans:**
  - Continue Center-wide projects and initiatives to reduce consumption of electricity
  - Possible implementation of sleep-state computer power management that was piloted in November 2014
  - Complete construction of the LEED Silver Computational Research Facility and begin construction of planned LEED Silver Measurement Systems Laboratory

Stormwater Quality Initiatives

- **Description:**
  - Increasing stormwater quality through expansion of riparian buffers, reduction of impervious surfaces near waterways, inclusion of bio-swales in landscaping plans associated with new parking areas, street sweeping, catch basins, prefabricated Filterra treebox filters, planting of trees, and use of construction and demolition debris as concrete trench fill material.

- **Results:**
    - 91.5 cubic yards of debris collected by quarterly street sweeping in 2015
    - 5.2 tons of debris removed from catch basins
- **Future Plans:**
    - Continue land use conservation from grass to forestland
    - Continue street sweeping and catch basin maintenance programs
    - Continue demolition of impervious surfaces for transition to green space

Other Future Commitments:

- Expansion/Improvement of LaRC's Natural Resource Management Program by identifying areas on Center to pursue Longleaf pine restoration or other restoration efforts, and improving the natural resources outreach program.
- Improvements to LaRC's potable and sanitary sewer water systems that will reduce potable water usage and sanitary sewer discharge by continuing to replace water lines for both systems, repairing manholes, lift stations, and other components to both systems, and installing metering for both systems followed by tracking data and identifying trends.